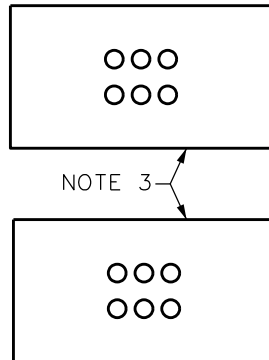
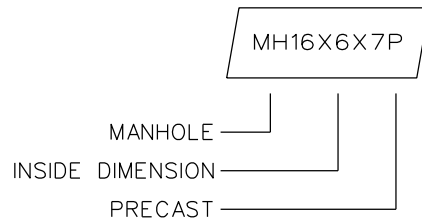
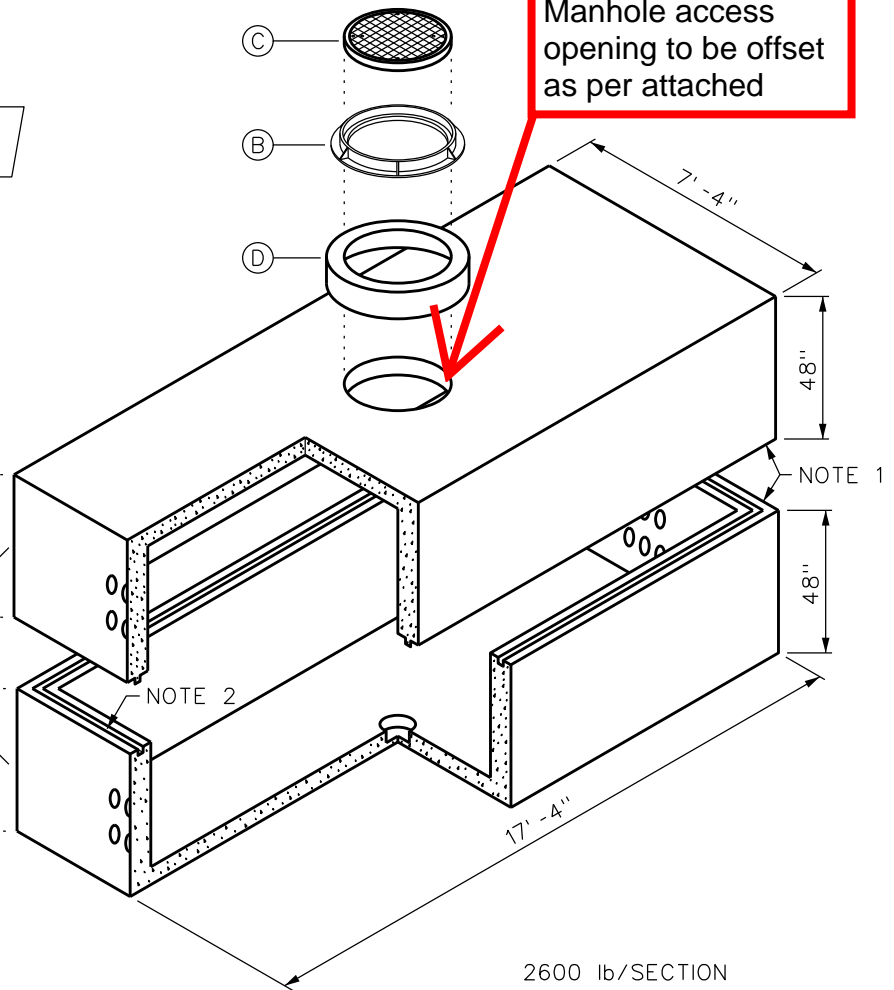


Z-580

MANHOLE_PULLBOX 

(A)



ITEM	MATERIAL DESCRIPTION	STOCK NO.	MH16X6X7P
A	PRE-CAST RECTANGULAR MANHOLE INSIDE DIMENSION 16' X 6' X 7'H OUTSIDE DIMENSION 17'-4" X 7'-4" X 8'H	0113-0178	1
B	MANHOLE RIM	4218-1016	1
C	MANHOLE COVER	4203-3514	1
D	INCREMENT RING, 6"	0113-0194	1

NOTES:

1. **MH16X6X7P** is the approved manhole for use with all standard primary cables (Z-629) and splices (Z-614). The inside dimensions are 16'LX6'WX7'H. This is a non-stocked material; it must be ordered by PMR, and can be delivered to the excavation site.
2. A mastic compound for sealing the 2 manhole sections will be provided by the manufacturer at the time of delivery.
3. Duct banks are 6" 'terminators' (pvc waterproof sealing ring).
4. Pulling irons are centered on the narrow walls of the bottom section and approximately 12" off the floor.
5. 8-5/8" ceiling inserts are strategically placed.
6. 2-4/0 bare cu wires (s/n 3330-9220) will be inserted through the wall of the bottom section. One (1) on each long wall for internal and external grounding purposes. At a minimum, the tails should be 18" internally and 30" externally. See Z-805 for grounding details.
7. The 'sump' hole is 4" deep and approximately 12" in diameter, and located in the center.

TDF: 129

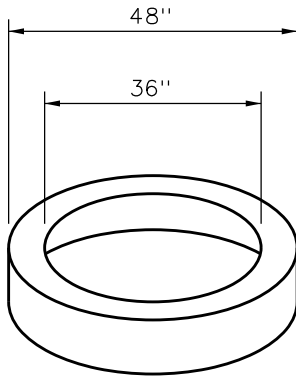
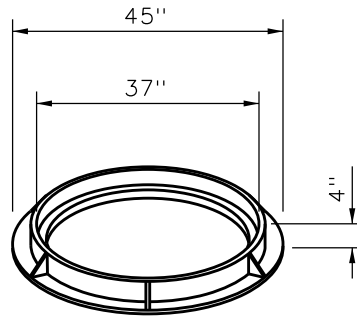
DRAWN: BLW DVLPED: JTR DATE: 06/01 REVIEWED: RLH DATE: 10/28/14 APPRVD: AAT DATE: 10/28/14 NEXT REVIEW: 10/18 REV: 2



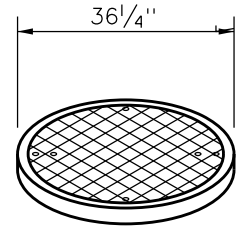
POWER
DISTRIBUTION
STANDARDS

PRE-CAST MANHOLE, 16'L

Z-580

INC-RING
3
6
9

MH-RIM



MH-COVER

MATERIAL DESCRIPTION	STOCK NO.	MH-RIM	MH-COVER	INC-RING*		
				3	6	9
MANHOLE RIM	4218-1016	1				
MANHOLE COVER	4203-3514		1			
INCREMENT RING, 3"	0113-0186			1		
INCREMENT RING, 6"	0113-0194				1	
INCREMENT RING, 9"	0113-0202					1

NOTE:

Increment rings are available in 3", 6" or 9" thickness. These rings shall be used to adjust the manhole rim to match the final grade surface.

DRAWN: BLW DVLPED: JTR DATE: 06/01

REVIEWED: RLH DATE: 10/28/14

APPRVD: AAT DATE: 10/28/14

NEXT REVIEW: 10/18

REV: 1

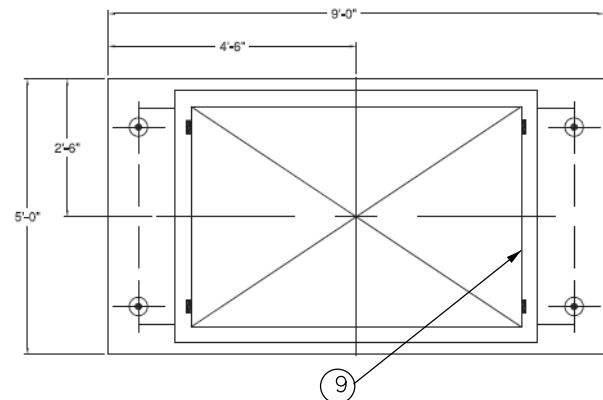


POWER
DISTRIBUTION
STANDARDS

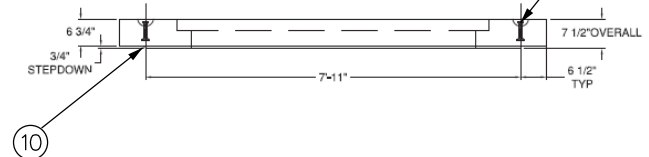
MANHOLE COMPONENTS

ROOF WITH AL DOOR

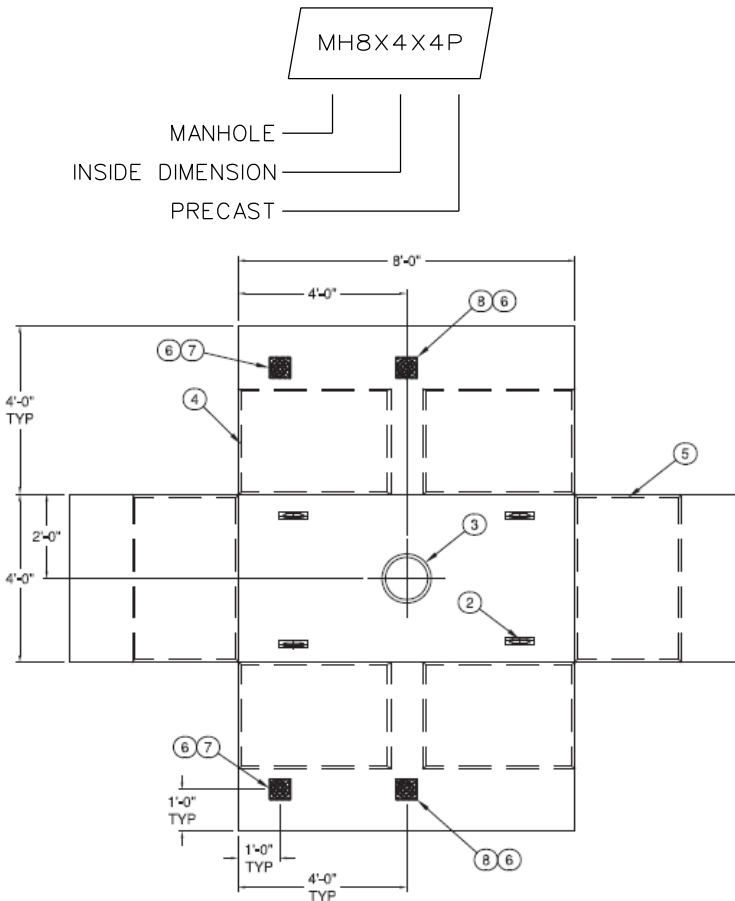
TOP VIEW



SIDE VIEW



9430 lb/BASE
2132 lb/ROOF



ITEM	MATERIAL DESCRIPTION	STOCK NO.	MH8X4X4P
A	PRE-CAST RECTANGULAR MANHOLE BASE INSIDE DIMENSION 8'L X 4'W X 4'H OUTSIDE DIMENSION 9'L X 5'W X 4'6''H	9503-6892	1
B	MANHOLE ROOF W/AL DOOR (48''X72'') ROOF DIMENSION 9'L X 5'W X 6.75''TH	9503-6893	1

NOTES:

1. FLAT SURFACE FOR CONNECTION OF BASE WITH ROOF SLAB, APPLY MASTIC SEALANT TO JOINT.
2. PULLING IRONS, FOUR, FOR LIFTING PURPOSES.
3. 4" DEEP BY 12" DIA. SUMP PIT WITH 1"X1/2" DEEP GROOVE.
4. FOUR 29"H X41-1/2"WX3"D KNOCKOUT PANEL
5. TWO 29"H X 46"W X 3"D KNOCKOUT PANEL
6. FOUR 6"X6"X2" PATCHOUT OPENING FOR GROUND CONNECTION TO REBAR.
7. #4/0 STRANDED COPPER CLAMPED TO MAT STEEL, 30" L EXPOSED PIGTAIL TO THE OUTSIDE.
8. #4/0 STRANDED COPPER CLAMPED TO MAT STEEL, 18" L EXPOSED PIGTAIL TO THE INSIDE.
9. 48"X72", NON TRAFFIC H20 RATED AL DOOR WITH PENTA HASP
10. APPLY MASTIC JOINT SEAL BEFORE INSTALL ON THE BASE.
11. FOUR 4 TON LIFTING DEVICES AT MINIMUM OF 14" FROM THE EDGE.
12. MH8X4X4P is designed for use with larger 1000 kcmil cables. This is a non-stocked material; that must be ordered and can be delivered to the excavation site.

TDF: 129

DRAWN: ACM DVLDPD: ACM DATE: 3/28/13 REVIEWED: RLD DATE: 10/28/14 APPRVD: AAT DATE: 10/28/14 NEXT REVIEW: 10/18 REV: 0

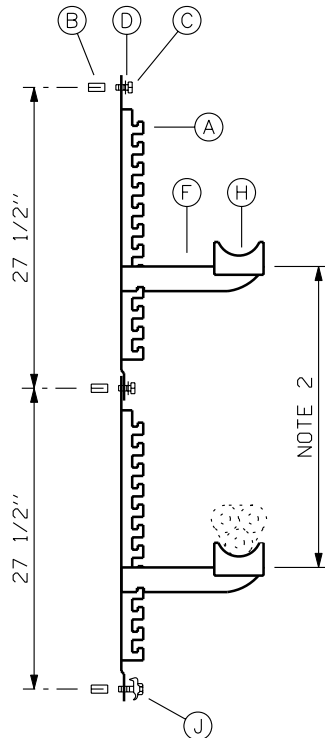


POWER
DISTRIBUTION
STANDARDS

PRE-CAST MANHOLE, 8'L

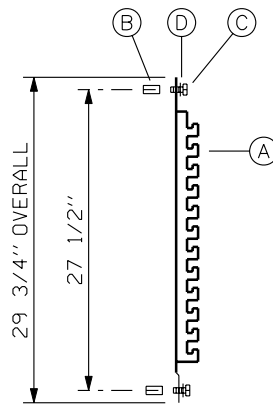
Z-582

MANHOLE_ACC

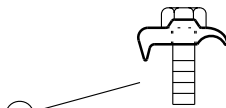


MH-RACK-STEP

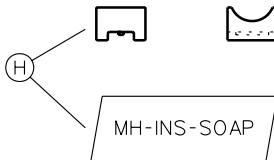
NOTE 1



MH-RACK

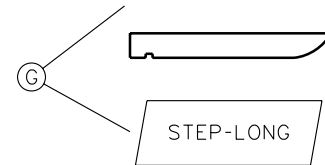
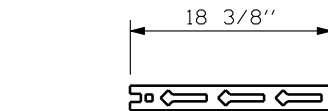


MH-GRD-RACK

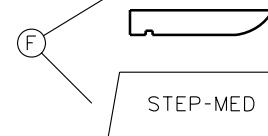
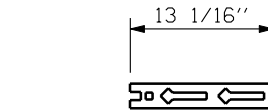


MH-INS-SOAP

NOTE 3

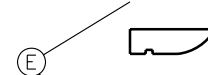
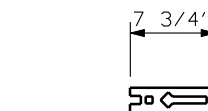


STEP-LONG



STEP-MED

NOTE 3



STEP-SHORT

ITEM	MATERIAL DESCRIPTION	STOCK NO.	MH-RACK-STEP	MH-RACK	STEP-SHORT	STEP-MED	STEP-LONG	MH-INS-SOAP	MH-GRD-RACK
A	WALL RACK, 32"	4218-0026	2	1					
B	1/2" DROP-IN ANCHOR	5101-0510	3	2					
C	1/2" X 1 1/2" S.S. BOLT	4552-5524	2	2					
D	1/2" S.S. FLAT WASHER	3523-0523	2	2					
E	HOOK-STEP/SHORT 7 3/4"	0113-0749			1				
F	HOOK-STEP/MED 13 1/16"	4208-0051	2			1			
G	HOOK-STEP/LONG 18 3/8"	4208-0069					1		
H	INSULATOR/SOAP	3909-0022	2					1	
J	1/2" X 2 1/8" BRONZE GROUND CONNECTOR	0119-0651	1						1

NOTES:

- For new installations, a minimum of two (2) **MH-RACK-STEP** per wall are required to support the cable and splices. Other manhole accessory applications will depend upon the number of circuits installed, cable size and cable entry.
- The spacing between the steps will depend upon the size of the cable installed, cable duct entry location and the splicing and cable training techniques used by the splicer.
- When installing and splicing additional circuits, a minimum of two (2) **STEP-MED** and two (2) **MH-INS-SOAP** are required for mounting on the existing racks.

TDF: 129

DRAWN: BLW

DVLPED: JTR

DATE: 06/01

REVIEWED: RWM

DATE: 05/09/08

APPRVD: JKP

DATE: 05/30/08

NEXT REVIEW: 11/10

REV: 3



POWER
DISTRIBUTION
STANDARDS

MANHOLE ACCESSORIES

Z582

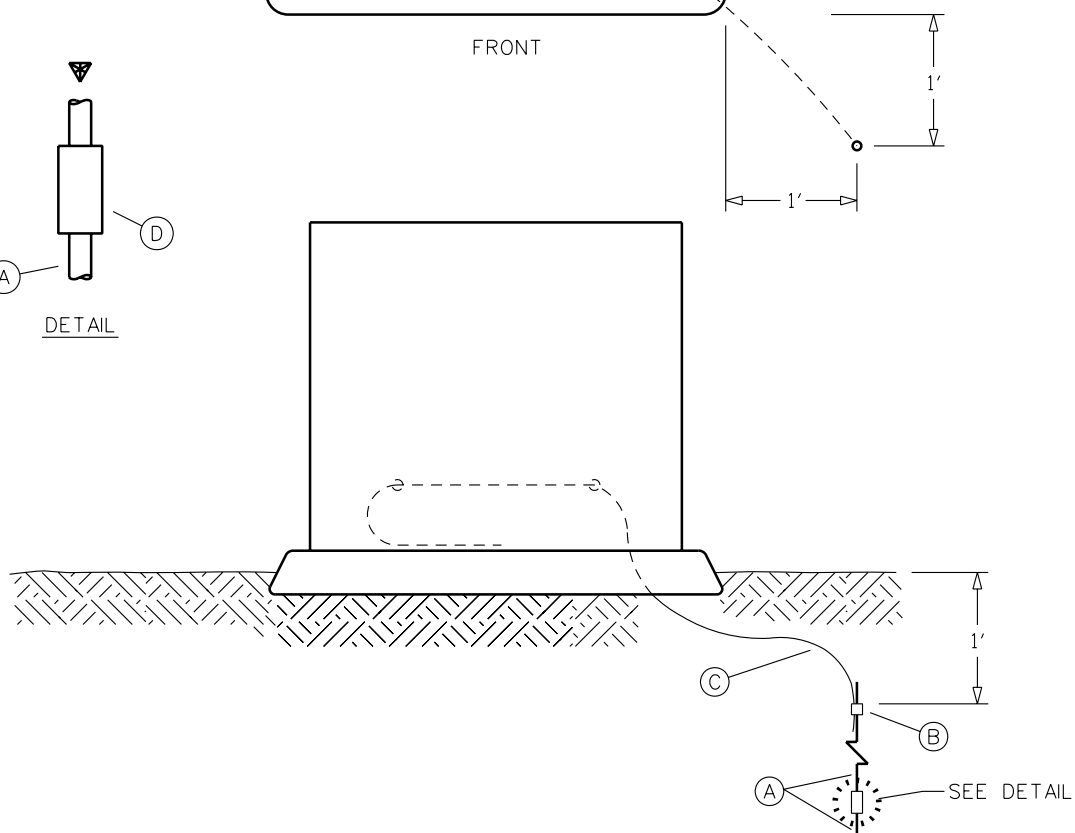
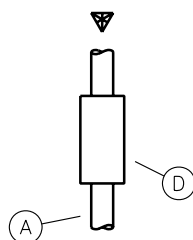
Z-805

GRD-PADMT

GRD-4X

C-345

FRONT



ITEM	MATERIAL DESCRIPTION	STOCK NO.	GRD-PADMT	GRD-4X
A	ROD, GROUND, GALV., 5/8" x 4' MIN. (6 REQ.)	9800-0113	6	1
B	CONNECTOR GROUND ROD	3825-0015	1	
C	#2 S.D. CU. WIRE	3330-0179	6	
D	COUPLING, GROUND ROD, THREADLESS	9900-3462	5	1

NOTES:

1. All driven grounds on delta or ungrounded wye connected circuits shall have a measured resistance of 25 ohms or less.

DRAWN: JFB

DVLPED: DCY DATE: 01/00

REVIEWED: RWM DATE: 01/31/08

APPRVD: JKP DATE: 02/21/08

NEXT REVIEW: 11/10

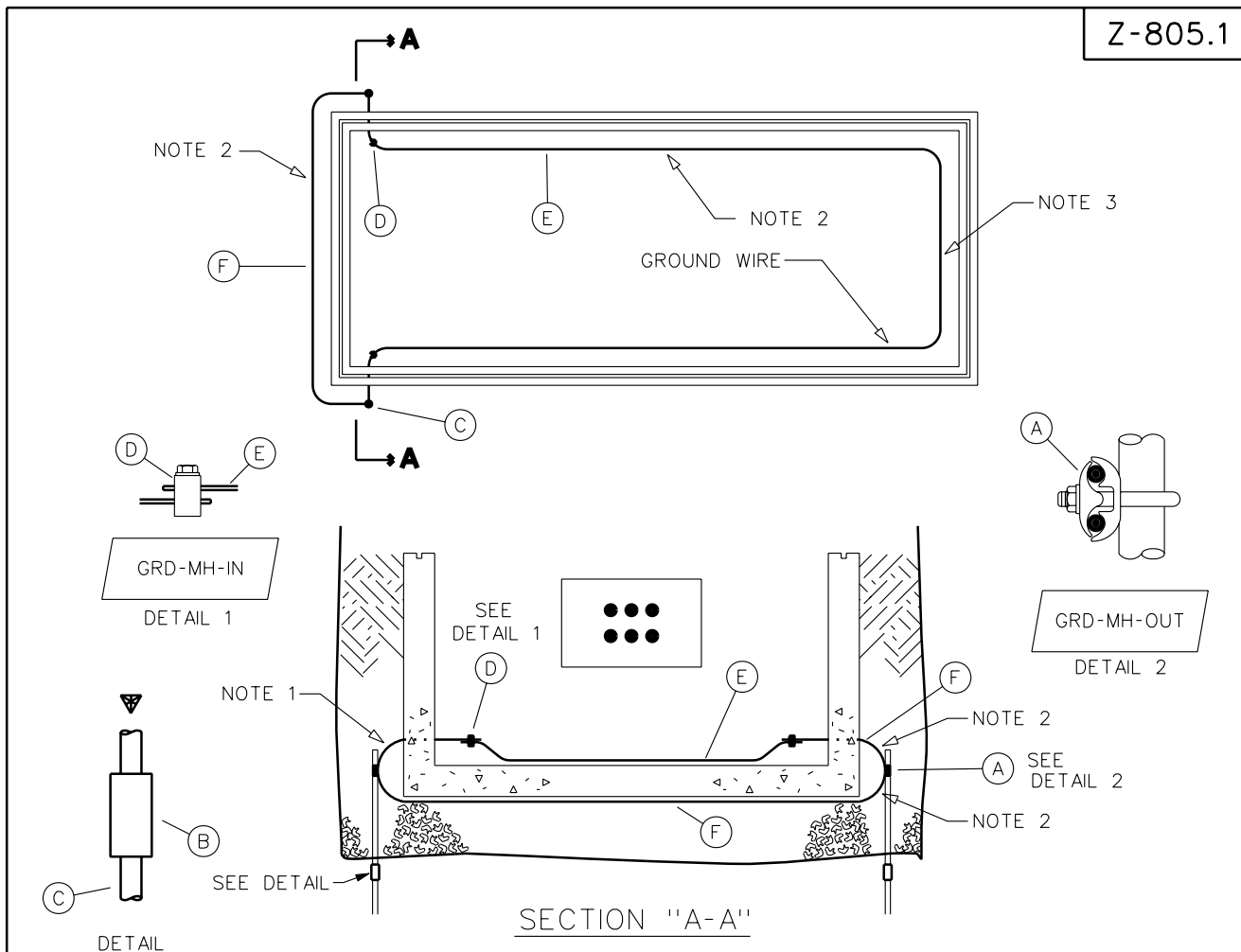
REV: 4



POWER
DISTRIBUTION
STANDARDS

GROUNDING OF
PADMOUNTED EQUIPMENT

Z805
3/4" = 1'-0"



ITEM	MATERIAL DESCRIPTION	STOCK NO.	GRD-MH-OUT	GRD-MH-IN
A	2C 2/0-250 GROUND ROD CONNECTOR	0123-0655	2	
B	COUPLING, GROUND ROD, THREADLESS	9900-3462	10	
C	ROD, GROUND, GALV., 5/8" x 4'	9800-0113	12	
D	4/0-4/0 VISE CONNECTOR, BRONZE	3823-0066		2
E	4/0 CU. COV., 19 STD. S.D.	3400-2212		30
F	4/0 CU. BARE S.D.	3330-9220	30	

NOTES:

- (S.N. 3330-9220) will be inserted through both walls by the manufacturer. A 4/0 Cu. bare (minimum 30" external and 18" internal) tail will be provided for the ground connections.
- Both grounding locations GRD-MH-IN and GRD-MH-OUT shall be "tied" together. The external ground locations should be connected with a 4/0 bare copper s.d. (S.N.3330-9220). The internal grounds should be connected with a 4/0 copper covered wire 19 str. s.d. (S.N. 3400-2212).
- GRD-MH-IN shall be attached to the wall racks when the hole is racked-out, see z-582.
- All driven grounds on delta or ungrounded wye connected circuits shall have a measured resistance of 25 ohms or less.

DRAWN: JFB

DVLPED: DCY DATE: 01/00

REVIEWED: RWM DATE: 01/31/08

APPRVD: JKP DATE: 02/21/08

NEXT REVIEW: 11/10

REV: 4



POWER
DISTRIBUTION
STANDARDS

MANHOLE GROUNDING

Z805_1
3/8" = 1'-0"

THIS PAGE INTENTIONALLY LEFT BLANK

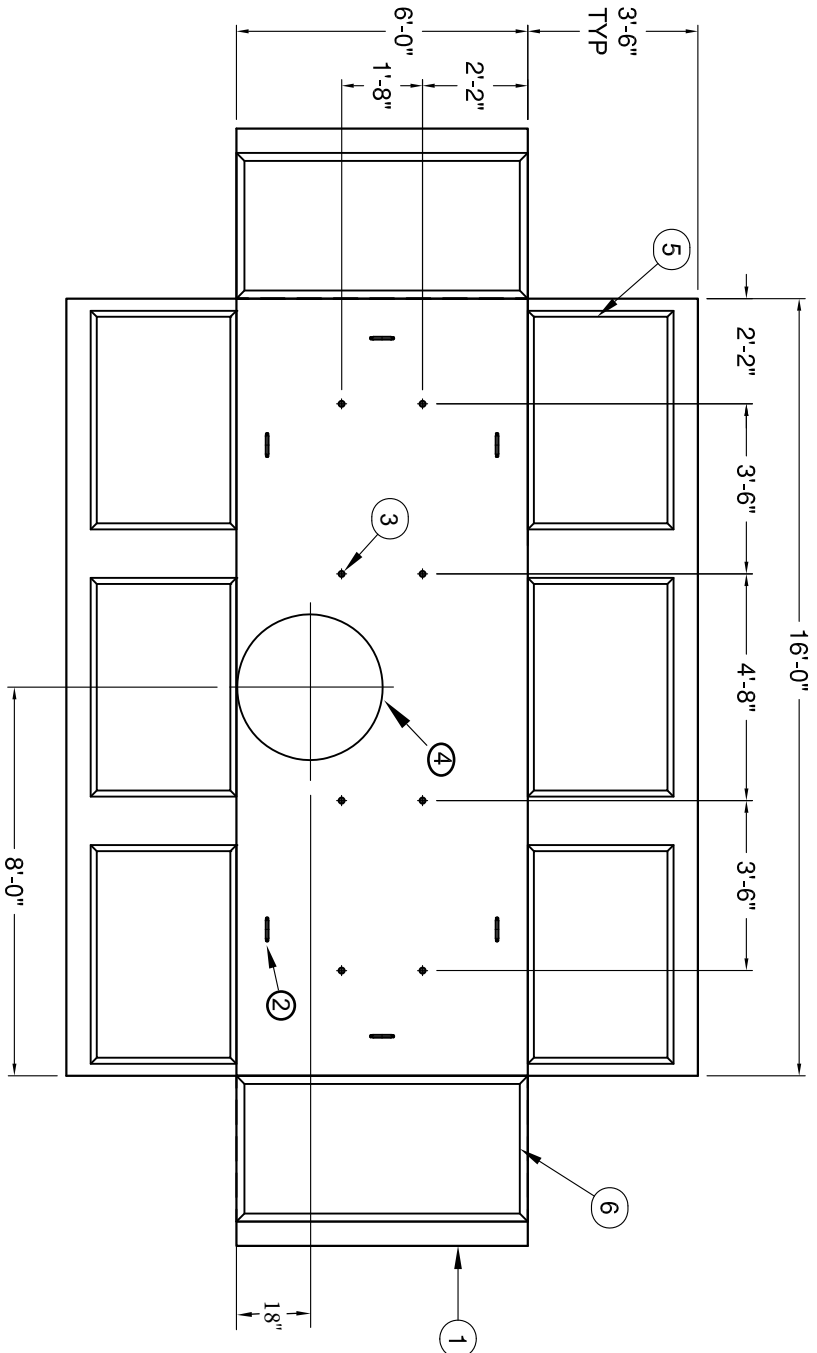
DRAWN: ___	DVLPED: ___	DATE: _____	REVIEWED: ___	DATE: _____	APPRVD: ___	DATE: _____	NEXT REVIEW: _____	REV: _
------------	-------------	-------------	---------------	-------------	-------------	-------------	-----------------------	--------



POWER
DISTRIBUTION
STANDARDS

BLANK

Approved Delmarva Manhole for Chapman Road Bridge
State #T201507402



FOLD-OUT VIEW

REV	DESCRIPTION	DATE:	BY:
A			

Parts List	
ITEM	NAME
1	SHIPLAP TONGUE, (TYP.) APPLY JOINT SEALANT TO PIECE BELOW BEFORE INSTALLING PIECE
2	(6) LIFTING HANDLE (102059)
3	(8) 5/8"Ø THREADED PENNSYLVANIA INSERT (100031) CI UNDERSIDE OF ROOF
4	36"Ø ACCESS OPENING
5	(6) 33"H X 51"W X 5"D KNOCKOUT PANEL
6	(2) 32"H X 68"W X 5"D KNOCKOUT PANEL

CONCRETE PRODUCTS, INC. www.acmiller.com		NPCCA CERTIFIED PLANT	
SPRING CITY - 610-948-4600			
LIVE LOAD: HS20-44	GOVERNING BODY:		
EARTH COVER: 0' TO 2'-0"	CONCRETE STRENGTH: 5000 PSI @ 28 DAYS		
WATER TABLE: ASSUME @ 3' BELOW GRADE	CONCRETE TYPE: TYPE I SCC CEMENT		
LIVE LOAD SURCHARGE: 2'-0"	REINFORCEMENT: GRADE 60 BLACK		
REINFORCING DESIGN: IN HOUSE			
SIZE & DESCRIPTION: 6'-0" X 16'-0" X 3'-6" TOP			
CUSTOMER:			
JOB NAME: Chapman Road Bridge 714			
THICKNESS: 6" ROOF: 8" WALLS: FLOOR:			
QTY: 1 CU. YDS WEIGHT: 18,920 LBS			
DRAWN BY: AI DRAWING DATE:			
PART NUMBER: 103903	SALES ORDER NUMBER:		SHEET: 000